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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/431,154	11/01/1999	TAKEHIRO KATA	104639	8340

25944 7590 07/23/2004

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1722	

DATE MAILED: 07/23/2004

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/431,154
Filing Date: November 01, 1999
Appellant(s): KATA ET AL.

James A. Oliff
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 14 June 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1, 2, 4 and 5 ("Group 1") and claim 6 ("Group 2") do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

1,248,891	Great Britain Patent Specification (Herbert et al.)	10-1971
5,208,044	Miyata et al.	5-1993
3,806,288	Materick	4-1974
3,990,823	Le Moullac	11-1976
4,289,463	Le Moullac	9-1981
6,066,283	Nara et al.	5-2000
3,553,789	Allitt	1-1971

(10) Grounds of Rejection

The following ground of rejection is applicable to the appealed claims:

Claims 1,2 and 4-6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Great Britain Patent Specification 1,248,891 (Figures 1-5) in view of Miyata et al. (U.S. Patent 5,208,044) and further in view of any one of Materick (U.S. Patent 3,806,288), Le Moullac (U.S. Patent 3,990,823), Le Moullac (U.S. Patent 4,289,463), Nara et al. (U.S. Patent 6,066,283) and Allitt (U.S. Patent 3,553,789).

British '891 discloses a vulcanizing mold substantially as claimed, comprising upper and lower sidewall mold members integrally attached to upper and lower base plates, upper 42 and lower 10 tread mold members indirectly attached to the upper and lower base plates and being constituted of upper segments and lower segments, respectively, the upper and lower segments being displaceable only radially relative to the upper and lower sidewall mold members, a single cam ring 43 in direct engagement with the upper and lower tread mold members (see especially

Figs. 4 and 5, showing that the cam ring engages with a tapered portion of the lower segments 11), the cam ring being always in engagement with the upper segments, the cam ring being adapted to be displaced independently of approaching displacements of the sidewall mold members toward each other (see especially page 2, lines 50-53, 70-73 and 93-100; page 4, lines 29-32; and page 5, lines 44+) to thereby simultaneously displace the upper and lower segments radially inwards while the upper and lower segments are in abutment with each other and while the cam ring remains in direct engagement with the upper tread mold member and in indirect engagement (via cooperating projection 81 and recess 34) with the lower tread mold member, and abutments means 79, 80 on the upper base plate and the cam ring for defining the upper limit position of the cam ring relative to the upper base plate. British '891 also discloses a method of vulcanizing a tire substantially as claimed using such a mold, the method comprising displacing the upper and lower sidewall mold members toward each other so that the upper and lower segments are brought into abutment with each other, and operating the cam ring while the cam ring remains in direct engagement with the upper tread mold member and in indirect engagement (via cooperating projection 81 and recess 34) with the lower tread mold member to simultaneously displace all of the segments radially inwards relative to the upper and lower sidewall members, with the upper segments in abutment with the lower segments.

British '891 does not disclose that the cam ring simultaneously displaces all of the segments radially inwardly while the cam ring remains in direct engagement with **both** upper and lower tread mold members. Miyata et al. disclose a tire vulcanizing mold and method, wherein a single cam ring 4 (formed of two connected parts 4a and 4b) simultaneously displaces all of the tread mold segments radially inwardly (independently of approaching displacements of

the sidewall mold members toward each other, see col. 8, lines 10-22) while the cam ring remains in direct engagement with both the upper tread mold members and the lower tread mold members. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify British '891 by providing the cam ring in direct engagement with both the upper and lower tread mold members to simultaneously displace the segments radially inwardly, as disclosed in Miyata et al., since such an arrangement would enable a more reliable radially inward movement of the lower tread mold member by applying a force from the outward side of the lower tread mold member rather than from the upper side thereof, and since such an arrangement is equivalent to the direct engagement of the cam ring with the upper tread mold member and the indirect engagement of the cam ring (via cooperating elements 81 and 34) with the lower tread mold member, as disclosed in British '891.

British '891 does not disclose a spring that urges the lower tread mold segments radially outwards. Each of Materick, Le Moullac '823, Le Moullac '463, Nara et al. and Allitt discloses a tire vulcanizing mold and method, including a cam ring which simultaneously displaces all of the tread mold segments radially inwardly, wherein a spring urges the tread mold segments radially outwards during opening of the mold. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify British '891 by providing a spring that urges the lower tread mold segments radially outwards, as suggested by any one of Materick, Le Moullac '823, Le Moullac '463, Nara et al. and Allitt, in order to assist in the opening movement of the tread mold segments and to assure that the tread mold segments move outwardly a distance sufficient to become free of the tread of the vulcanized tire upon mold opening.

(11) Response to Argument

Appellant argues that Miyata et al. do not disclose the use of a "single cam ring" as claimed; however, the examiner contends that Miyata et al. do disclose a single cam ring ("actuator" 4). Miyata et al. further disclose that this single member is divided into upper and lower portions 4a, 4b which are provided with means for releasably connecting the portions together during mold closing when the connected cam ring portions (forming a single, unitary cam ring) simultaneously move the upper and lower tread mold segments radially inwardly (see, e.g., Miyata et al. at column 3, lines 45-57). The connected cam ring portions are considered to be a "single" cam ring as claimed, giving the term "single" its broadest reasonable interpretation (note that the specification does not define the term "single", and in fact only uses the term twice, at page 3, line 15 and page 6, line 4).

Furthermore, British '891 clearly discloses a single cam ring engaging with the upper and lower tread mold segments for simultaneously moving the tread mold segments radially inwardly, and it would have been obvious to a skilled artisan to modify the teachings of British '891 by providing the single cam ring in direct engagement with **both** the upper and lower tread mold segments to simultaneously move the upper and lower tread mold segments radially inwardly, in view of the disclosure of Miyata et al. of a cam ring member (comprised of connected upper and lower portions) in direct engagement with both the upper and lower tread mold segments to simultaneously move the upper and lower tread mold segments radially inwardly (note the disclosure of simultaneous radial movement of the tread mold segments in Miyata et al. at column 2, lines 27-51 and column 3, lines 33-35).

Appellant argues that Miyata et al. "teaches directly away from the use of a single cam ring" by requiring a two-piece actuator (cam ring) to address the problem due to equatorial shift of the tire center line; the examiner disagrees. Miyata et al. do not disclose that the divided cam ring solves such a problem; to the contrary, Miyata et al. describe that the divided upper and lower sector portions (tread mold members) address the problem of the prior art apparatus as shown in Figures 24 and 25 of Miyata et al. which utilize a tread mold member C which is not divided into upper and lower parts (see, for example, column 3, lines 17-36).

Appellant argues that the modification of British '891 with the teachings of Miyata et al. "would change the principle of operation of the primary reference (British '891) and/or render the reference inoperable for its intended purpose", since British '891 requires the engagement of the upper and lower tread mold members with cooperating projections 81 and recesses 34. However, Miyata et al. clearly disclose such cooperating projections and recesses (see Figure 13, column 3, lines 12-14 and column 8, lines 45-51), such that the use of a cam ring in direct engagement with both the upper and lower tread mold members is clearly operable with cooperating projections and recesses in the upper and lower tread mold members.

Appellant argues that the modification of British '891 with the teachings of Miyata et al. "would require elimination of important structures of British '891" because Miyata et al. "assures reliable radial movement of the separate upper and lower sectors 3a, 3b by having the two distinct actuators 4a, 4b for causing relative movement of the separate upper and lower sectors 3a, 3b." However, the modification of British '891 with the teachings of Miyata et al. is not seen to "require elimination of important structures", especially considering that the actuator portions 4a, 4b in Miyata et al. are connected to each other as a single actuator (cam ring) to

assure that they move in synchronism when used for radially inwardly moving the upper and lower tread mold members by direct engagement therewith (Miyata et al., col. 3, lines 45-57), and also in view of the cooperating projections and recesses of the tread mold members of Miyata et al. (see Figure 13) which engage with each other prior to the tread mold members being radially displaced by the actuator (cam ring) 4.

Appellant argues that the combination of references does not suggest the vulcanizing method of claim 6, since Miyata et al. "fails to show a cam ring which directly engages the upper and lower tread mold members, while the cam ring remains in direct engagement with the upper and lower tread mold members", further arguing that Miyata et al. "discloses separate actuator portions 4a, 4b individually contacting corresponding individual upper and lower sector portions 3a, 3b causing the sector portions to be displaced." The examiner disagrees. As described above, Miyata et al. disclose a cam ring (actuator) 4 which directly engages the upper and lower tread mold members while the cam ring is in direct engagement with both the upper and lower tread mold members, and furthermore the actuator portions 4a, 4b are fixedly connected to each other to form a single, unitary actuator/cam ring during radial displacement of the tread mold members; it would have been obvious to a skilled artisan to modify the method of vulcanizing a tire as disclosed in British '891 by providing the cam ring in direct engagement with both the upper and lower tread mold members, as disclosed in Miyata et al., since such an arrangement would enable a more reliable radially inward movement of the lower tread mold member by applying a force from the outward side of the lower tread mold member rather than from the upper side thereof, and since such an arrangement is equivalent to the direct engagement of the cam ring with the upper tread mold member and the indirect engagement of the cam ring (via

cooperating elements 81 and 34) with the lower tread mold member, as disclosed in British '891.

Note that claim 6 does not require that the cam ring be a "single" cam ring.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Primary Examiner
Art Unit 1722

7/20/04

jpm
July 20, 2004

Conferees

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